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SHAUGHNESSY NO.

REVIEW NO.

EEB REVIEW

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TYPE PRODUCT(S): I, D, H, F, N, R, S Herbicide

DATA ACCESSION NO(S). 411114-01,02,03,04

PRODUCT MANAGER NO. R. Taylor (25)

PRODUCT NAME(S) Touchdown Products (Sulfosate)

COMPANY NAME ICI Agriculture Products

SUBMISSION PURPOSE Submission of plant data in response to a previous EEB review

SHAUGHNESSY NO.	CHEMICAL & FORMULATION	% A.I.
128501	N-phosphonomethylglycine trimethylsulfonium salt	

EEB REVIEW

Chemical: Sulfosate

100.1 Submission Purpose and Pesticide Use:

Submission of plant data to support registration of sulfosate to control weeds in noncrop areas around the farm.

100.2 Formulation Information:

Touchdown® Concentrate

Active Ingredient:

N-Phosphonomethylglycine trimethylsulfonium salt 52.2%

Inert Ingredients : 47.8%

Contains 5.5 pounds active ingredient per gallon.

Touchdown® 4-LC

Active Ingredient:

N-Phosphonomethylglycine trimethylsulfonium salt 39.9%

Inert Ingredients : 60.1%

Contains 4 pounds active ingredient per gallon.

100.3 Application Information:

Application rates range from 1/3 to 3.0 qt/a for Touchdown® Concentrate and 1/2 to 4 qt/a for Touchdown® 4-LC depending on species to be controlled. Only ground applications may be made.

See attached label for complete application information.

100.4 Target Organism:

Used for nonselective vegetation control.

100.5 Precautionary Labeling:

Keep out of lakes, ponds and streams.

Do not apply to any body of water, wetlands or other aquatic habitats. Do not contaminate water when disposing of equipment washwaters.

Caution must be taken when applying Touchdown® to avoid drift or contact with nontarget plant species. Such contact may result in plant injury.

101 Hazard Assessment:

101.2 Liklihood of Adverse Effects on Nontarget Organisms:

Sulfosate is a non-selective herbicide applied by ground equipment for noncrop vegetation control around the farm (farmyards, fuel storage areas, fence rows, rights-of-way, soil bank land, and barrier strips).

Rate of application ranges from 0.45 to 4.125 lb ai/a depending on product and species of weed.

Nontarget plant damage can occur from drift, volitilty, or runoff. Since the herbicide is not volatile (vapor pressure $\leq 4 \times 10^{-7}$ torr @ 25 °C), and drift from ground rigs is considered to be minimal, EEB's main concern is from runoff following application. With a water solubility of 430 gm/100ml, the potential is high for runoff to occur.

Runoff - Aquatic

Assumeing a worst case scenario for Touchdown® Concentrate of 5% runoff into a 1 acre pond 6 feet deep, following application to a 10 acre noncrop site treated at the maximum label rate of 3.0 qt/A (4.125 lb ai/A), 2.1 lb ai would enter the pond. This will result in a water concentration of 0.13 ppm. Since the EC_{50} for Selenastrum capricornutum is 21.6 ppm (based on cells/ml at 96-hr), the hazard to this alga is minimal. Data for the remaining 4 species of aquatic plants are outstanding.

Runoff - Terrestrial

Using the same runoff scenario to estimate hazard for terrestrial plants, 0.95 kg could be deposited on soils off site. None of the plant species tested at the maximum label rate of 4.48 kg/h were adversely effected in the seed germination or seedling emergence tests. Based on this scenario the hazard to nontarget plants from runoff is considered to be minimal. No additional terrestrial nontarget plant testing is required.

101.3 Endangered Species Considerations:

On July 23, 1987 EEB requested a formal consultation with the U.S. Fish and Wildlife Service for all noncrop herbicides as part of the noncrop cluster. This consultation is

still ongoing. When completed, labeling will be provided to ensure the protection of threatened or endangered plant species.

101.4 Adequacy of Toxicity Data:

Tier II data were submitted on the effect of sulfosate on seed germination/seedling emergence, vegetative vigor, and aquatic plant growth - freshwater green algae. These studies were acceptable and satisfy the Guidelines requirements. No additional terrestrial plant data are required. Tier II aquatic plant data are outstanding for Lemna gibba, Skeletonema costatum, Anabaena flos-aquae, and a freshwater diatom.

The following is a brief summary of the studies:

ICIA0224 : Pre and Post-emergence Effects on Non-target Plants. Accession No. 411114-03.

Sulfosate at the maximum label rate of 4.48 kg/h did not adversely affect the germination or emergence of Avena fatua (AVEFA), Cyperus rotundus (CYPRO), Triticum arvense (TRZAW), Zea mays (ZEAMX), Beta vulgaris (BETVU), Brassica napus (BRANA), Cassia obtusifolia (CASOB), Galium aparine (GALAP), Glycine max (GLXMA), or Xanthium spinosum (XANSP).

Data for the vegetative vigor test using the same species indicated EC_{50} values (dry weights in mg/plant on day 19) were 0.11 kg/h - AVEFA, 0.28 kg/h - CYPRO, 0.13 kg/h - TRZAW, 0.09 kg/h - ZEAMX, 0.23 kg/h BETVU, 0.14 kg/h - BRANA, 0.18 kg/h - CASOB, 0.16 kg/h - GALAP, 0.15 kg/h - GLXMA, and 0.39 kg/h - XANSP.

ICIA0224: Determination of toxicity to the green alga Selenastrum capricornutum. Accession No. 411114-04

Data indicate that the 96-hr EC_{50} using Selenastrum capricornutum , based on cells/ml, is 21.63 mg/l.

101.5 Adequacy of Labeling:

The following statement should be added to the label:

> Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Do not contaminate water when disposing of equipment washwater or rinsate.

Additional labeling may be required to ensure the protection of endangered or threatened species. See Sec. 101.3.

103 Conclusions:

EEB has reviewed the nontarget plant data submitted in support of sulfosate use on noncrop sites around the farm. The terrestrial plant data satisfy the Tier II Guideline requirements. No additional terrestrial plant data are required. The current use pattern and restriction to ground application only should minimize the hazard to terrestrial nontarget plants.

The aquatic plant data for Selenastrum capricornutum satisfy the Tier II Guideline requirements, however, data are outstanding for Lemna gibba, Skeletonema costatum, Anabaena flos-aquae, and a freshwater diatom. Without these data, the hazard to aquatic nontarget plants is unclear.

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Sulfosate ecological effects review

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___ Identity of product inert ingredients

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___ Description of the product manufacturing process

___ Description of product quality control procedures

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___ Sales or other commercial/financial information

X A draft product label

___ The product confidential statement of formula

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___ FIFRA registration data

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